

AMENDMENTS TO THE CLAIMS

Please amend the Claims as follows:

1. **(Currently Amended)** A computer-based method implementing a robust 2-phase commit protocol between a client and a server via a relational table and software facilitating communications with said client and said server, said relational table storing a list of potentially indoubt units of work, said method as implemented in said software comprising the steps of:

(a) receiving an invocation from said client for a first phase of commit for a transaction representing a unit of work;

(b) inserting an entry in said relational table corresponding to said unit of work and transmitting an instruction to said server to prepare to commit for said transaction, said inserted entry indicating said unit of work is potentially an indoubt entry; and

(c) receiving a request from said client to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, ~~wherein~~ and

(d) updating said relational table ~~is updated~~ after execution of said request.

2. **(Currently Amended)** A computer-based method as per claim 1, wherein, if said received request is a COMMIT or a ROLLBACK decision, said method comprising the steps of:

communicating with said server and processing said COMMIT or ROLLBACK request, and upon successful processing,

deleting a corresponding entry in said relational table.

3. **(Currently Amended)** A computer-based method as per claim 1, wherein, if said received request is a RECOVER decision, said method comprising the steps of:
- querying said relational table to identify a list of indoubt units of work;
 - transmitting said list of indoubt units of work to said client;
 - receiving a COMMIT or ROLLBACK decision from said client;
 - communicating with said server to process said commit or rollback request, and upon successful processing,
 - deleting a corresponding entry in said relational table.
4. **(Currently Amended)** A computer-based method as claim 1, wherein said server is a database cluster and said software supports execution of said recover decision even if one or more members of the database cluster are unavailable.
5. **(Currently Amended)** A computer-based method as per claim 1, wherein said relational table specifies row-level locking ~~for keeping contention on said relation table to a minimum.~~
6. **(Currently Amended)** A computer-based method as per claim 1, wherein said relational table is a SQL table and said step of inserting an entry in said relational table is performed via issuing a SQL INSERT instruction.
7. **(Currently Amended)** A computer-based method as per claim 1, wherein said relational table is stored in said server and a request for said insertion of entry in said relational table is placed on a network message that includes said instruction to said server to prepare to commit for said transaction.

8. **(Currently Amended)** A computer-based method as per claim 1, wherein said method is implemented across networks.

9. **(Currently Amended)** A computer-based method as per claim 8, wherein said across networks element comprises any of, or a combination of, the following: local area network (LAN), wide area network, wireless network, or the Internet.

10. **(Currently Amended)** A computer-based method as per claim 1, wherein steps (a) through (c) are performed over a network that is separate from a network over which requests for deletions of updating entries in said relational table are placed on a separate network connection to avoid starting a new unit of work.

11. **(Currently Amended)** A computer-based method as per claim 1, wherein said method comprises the step of mapping said 2-phase protocol onto a protocol supported by said server.

12. **(Currently Amended)** An article of manufacture comprising computer usable medium having computer readable program code embodied therein implementing a robust 2-phase commit protocol between a client and a server via a relational table and software facilitating communications with said client and said server, said relational table storing a list of potentially indoubt units of work, said medium comprising:

(a) computer readable program code receiving an invocation from said client for a first phase of commit for a transaction representing an unit of work;

(b) computer readable program code inserting an entry in said relational table corresponding to said unit of work and transmitting an instruction to said server to prepare to

commit for said transaction, said inserted entry indicating said unit of work is potentially an indoubt entry; and

(c) computer readable program code aiding in receiving a request from said client to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, wherein
and

(d) computer readable program code updating said relational table is updated after execution of said request.

13. (Original) An article of manufacture as per claim 12, said medium further comprising:

computer readable program code aiding in communicating with said server and processing said COMMIT or ROLLBACK request, and upon successful processing,

computer readable program code deleting a corresponding entry in said relational table.

14. (Original) An article of manufacture as per claim 12, said medium further comprising:

computer readable program code querying said relational table to identify a list of indoubt units of work;

computer readable program code aiding in transmitting said list of indoubt units of work to said client;

computer readable program code aiding in receiving a COMMIT or ROLLBACK decision;

computer readable program code aiding in communicating with said server to process said COMMIT or ROLLBACK request, and upon successful processing, and

computer readable program code deleting a corresponding entry in said relational table.

15. (Currently Amended) An article of manufacture as per claim 12, wherein said relational table specifies row-level locking for keeping contention on said relation table to a minimum.

16. (Original) An article of manufacture as per claim 12, wherein said relational table is a SQL table and computer readable program code inserts an entry in said relational table is performed via issuing a SQL INSERT instruction.

17. (Original) An article of manufacture as per claim 12, wherein said relational table is stored in said server and a request for said insertion of entry in said relational table is placed on a network message that includes said instruction to said server to prepare to commit for said transaction.

18. (Currently Amended) A computer-based method implementing a robust 2-phase commit protocol between a transaction manager and a database cluster via software facilitating communications with said transaction manager and said database cluster, said method as implemented in said software comprising the steps of:

(a) creating an SQL table for storing a list of potentially indoubt units of work

(b) receiving an invocation from said transaction manager for a first phase of commit for a transaction representing an unit of work;

(c) inserting, via an SQL INSERT instruction, an indoubt entry in said SQL table corresponding to said unit of work and transmitting an prepare to commit instruction to said database cluster, said SQL INSERT instruction and said prepare to commit instruction placed on one network message to minimize cost; and

(e)(d) receiving a request from said transaction manager to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, ~~wherein and~~

(e) updating said SQL table is updated after execution of said request.

19. (Currently Amended) A computer-based method as per claim 18, wherein if said received request is a COMMIT or ROLLBACK decision, said method comprising the additional steps of:

communicating with said database cluster and processing said COMMIT or ROLLBACK request, and upon successful processing,

deleting a corresponding entry in said relational table via an SQL DELETE instruction.

20. (Currently Amended) A computer-based method as per claim 19, wherein steps (a) through (c) are performed over a network that is separate from a network over which said SQL DELETE instructions are ~~passed~~ placed on a separate network connection to avoid starting a new unit of work.

21. (Currently Amended) A computer-based method as per claim 18, wherein if said received request is a RECOVER decision, said method comprising the additional steps of:

querying said SQL table to identify a list of indoubt units of work;

transmitting said list of indoubt units of work to said transaction manager;

receiving a commit or rollback decision from said transaction manager;

communicating with said database cluster to process said commit or rollback request, and upon successful processing, and

deleting a corresponding entry in said SQL table via a SQL DELETE instruction.

22. (Currently Amended) A computer-based method as per claim 21, wherein steps of querying, transmitting, receiving, and communicating are performed over a network that is separate from a network over which said SQL DELETE instructions are paeed-placed on a separate network connection to avoid starting a new unit of work.

23. (Currently Amended) A method as per claim 18, wherein said SQL table specifies row-level locking ~~for keeping contention on said relation table to a minimum.~~

24. (Currently Amended) A computer-based method as per claim 18, wherein said method is implemented across networks.

25. (Original) A method as per claim 24, wherein said across networks element comprises any of, or a combination of, the following: local area network (LAN), wide area network, wireless network, or the Internet.

26. (Currently Amended) Software implementing a 2-phase commit protocol between a client and a server comprising computer-readable program code implementing:

a first module invoked to create a relational table in said server to store potential indoubt units of work;

a second module invoked to insert or delete indoubt entries of work in said relational table,

whrcin insertions of indoubt entries are performed if an invocation is received from said client for a first phase of commit for a transaction representing a unit of work; and

wherein deletions of indoubt entries are performed upon successful processing of a commit or rollback decision; and

a third module invoked upon receiving a recover instruction from said client, said third module extracting a list of indoubt units of work from said relational table and transmitting said extracted list to said client, wherein said client inspects said list and issues a commit or rollback decision to said middleware regarding said indoubt units of work in said list.

27. (Original) Software as claim 26, wherein said server is a database cluster and said software supports execution of said recover decision even if one or more members of the database cluster are unavailable.

28. (Currently Amended) Software as per claim 26, wherein said relational table specifies row-level locking for keeping contention on said relation table to a minimum.

29. (Original) Software as per claim 26, wherein said relational table is a SQL table and said step of inserting an entry in said relational table is performed via issuing a SQL INSERT instruction.

30. (Original) Software as per claim 26, wherein a request for said insertion of entry in said relational table is placed on a network message that includes an instruction to said server to prepare to commit for said transaction.

31. (Currently Amended) Software as per claim 26, wherein said software further comprises computer readable program code implementing a fourth module mapping said 2-phase protocol onto a protocol supported by said server.